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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,948	09/23/2003	John Francis Birch	2003P13406 US	3311

7590 04/20/2005

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EXAMINER

REHM, ADAM C

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EC

Office Action Summary	Application No. 10/668,948	Applicant(s) BIRCH ET AL.	
	Examiner Adam C. Rehm	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/23/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040929</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

The drawings are objected to because there are multiple inconsistencies within Figures 1-3 and the specification.

1. With respect to Figure 1, it is unclear as to whether Figure 1 is the presently claimed invention or prior art. The specification states on Page 7, Line 2 that the present invention is designed "without the use of a lens." Yet, Figure 1 shows a lens 20. If Figure 1 is in fact prior art, it should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
2. Other informalities are present in Figure 1, which shows a visor 40 with a broken or dashed line. It appears as though the dashed line is intended to illustrate the outer rim of the visor 40. Generally, use of a dashed line is reserved to reveal a concealed or hidden surface. In Figure 1, the outer rim of visor 40 is not concealed, thus requiring the dashed line to be solid.
3. Further informalities in Figure 1 include: the visor 40 appears to conceal the entire, or at least a portion of the lens 20 and cover 30. The concealed portions should be illustrated with dashed lines.
4. Further informalities are present in Figure 1. In order to comply with MPEP § 1.84(u)(1), view numbers must be preceded by the abbreviation "FIG." as opposed to "Figure."
5. With respect to Figures 2 and 3, the specification states on Page 7, Lines 1-3 that Figures 1-14 disclose [the present invention], which conflicts with the legend on

Figures 2 and 3 stating that the Figures are prior art. Further, objects illustrated in Figures 2 and 3 are referred to throughout the application with respect to the present invention, e.g. Page 7 Lines 9-10 incorporates the LED lamp 50 into the present invention. Notably, Examiner has not objected to every inconsistency herein. Thus, Applicant is required to review the entire application and correct all inconsistencies.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference, which is mentioned in the description: "wing plate 170", Page 8, Lines 2-3.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

Page 8, Lines 1-2 references "LED lamps 100 from Figures 1 and 2." Neither Figure 1 nor 2 show LED lamps 100.

7. Page 8, Line 17 states, "Figures 5a-c depicts two semi circular shaped printed circuit boards 160..." Figures 5a and 5b do not show circuit boards 160.

8. Page 9, Line 18 references "circuit board assemblies 160," which is previously referred to as "circuit board assembly 165", e.g. Page 8, Line 19, Page 10, Line 7, etc. Notably, Examiner has not objected to every inconsistency herein. Thus, Applicant is required to review the entire application and correct all inconsistencies.

Appropriate correction is required.

Claim Objections

Claims 6, 7, 9, 14, 18 and 21 are objected to because of the following informalities:

9. Claims 6, 9, 14 and 18, the first Line thereof: the word combination "apparatus Claim" appears incorrect. It appears that it should instead be --apparatus of Claim--.

10. Claim 7, Line 5: the word combination "surface the" appears incorrect. It appears that it should instead be --surface of the--.

11. Claim 21, Line 12: the use of the word "cones" appears incorrect. It appears that it should instead be --cone--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "inclined" is indefinite for not defining what object is inclined and not defining a reference for the inclined object.

Claims 4, 12 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "comprising a 1 inch (2.5 cm) long light pattern" is indefinite for not defining how the light pattern is limited to 1 inch. Intended use requires that the light pattern extend further than 1 inch in order to be seen from a reasonable distance.

Claim 15 recites the limitation "the at least one circuit board" in Line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the at least one circuit board" and "the wing plate" in Lines 13 and 14 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "the at least one printed circuit board" in Line 6. There is insufficient antecedent basis for this limitation in the claim.

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Claim 27 recites the limitation "the at least one printed circuit board" in Line 9.

There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by BORENSTEIN (US 4,954,822).

3. BORENSTEIN discloses a street traffic signal device having a plurality of LED lamps (25 in Figs. 1-3) affixed to and projecting from substrate (23 in Fig. 6) inclined therein conductive pathways (printed circuit board, 21) formed thereon for supplying power thereto; the plurality of LED lamps may be selectively oriented on the substrate at least during fabrication thereof, so as to shape output light beam; the LED lamp generates a cone shaped light pattern ranging between 6 and 30 degrees, optimum 8 degrees (Fig. 6); the substrate comprises a hot resin formation or cold resin formation (21); the plurality of LED lamps sit generally perpendicular to a planar surface the substrate (Col. 8, Lines 27-31); the substrate is affixed to the traffic signal housing by welding, stapling, glue, or fasteners (Fig. 6).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 5 and 9-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over BORENSTEIN (US 4,954,822) in view of LUK (US 6,585,395).

6. BORENSTEIN substantially discloses the claimed invention including the mounting structure (9 or 15) and plurality of LED lamps (25 in Figs. 1-3) each generating a cone shaped light pattern ranging between 6 and 30 degrees, including optimum 8 degrees (Fig. 6); the mounting structure comprising at least one printed circuit board (21) and at least one vertical plate (27); wherein the LEDs (25) sit generally perpendicular (Fig. 6) to a planar surface of printed circuit board (21); in regards to the method claims, given the structure by BORENSTEIN, the corresponding method steps of shaping a beam path are considered to be met.

7. However, BORENSTEIN does not disclose: 1 inch (2.5 cm) long light pattern (Claims 4 and 12); each light pattern overlaps at a distance greater than 1 inch (Claims 5 and 13); the LED lamps selectively oriented obliquely at least relative to each other (Claim 9); the one-wing plate (Claim 14) affixed to the printed circuit board by welding, stapling, glue or fasteners (Claims 16 and 19); the printed circuit board is angled generally downward by the at least one vertical plate from a back surface of the signal

housing; the one wing plate orients the printed circuit board inward from a centerline of the vertical plate.

8. In regards to the 1 inch long light pattern and overlapping distance of 1 inch, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the traffic lighting device of BORENSTEIN including the claimed 1 inch light pattern and greater than 1 inch overlapping of light, since it is well-known in the art that a plurality of light sources proximate to each other emit overlapping light beams visible to the pedestrians or drivers at distances of at least 1 inch or more.

9. LUK teaches a wing plate (connecting ring 54) affixed to the printed circuit board (14) by means of fasteners (fixing pins, Col.7, Line 8), the printed circuit board (14) being angled downward by a vertical plate (44, 52) from a back surface (Fig. 4) of the signal housing (20), and the wing plate (54) orienting the printed circuit board (14) inward from a centerline (30) of vertical plate (44, 52), for the purpose of selectively varying the common directional angles of a plurality of LED arrays. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modifying the traffic lighting device of BORENSTEIN to include the type of adjustable wing plate/printed circuit board assembly as taught by LUK in order to selectively vary the common directional angles of the plurality of LED arrays, which would provide more than one viewing angle or a broad viewing angle of the light emitted from the display (Col.2, Lines 6-10).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. JONES et al. (US 6,693,556) provides an enhanced visibility system for a traffic control signal (stop sign 46) with LEDs (45a-h) having radiation angles of less than 20 degrees and approximately 10 degrees. Jones teaches that a smaller radiation angle concentrates the available light making the LEDs easier to see. 11.

12. LIN et al. (US 6,567,010) provides a traffic signal head (10), a housing (11) and a plurality of LEDs (12) mounted in an essentially co-planar manner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F, 8:30-5 CST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ACR



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PRIMARY EXAMINER